

**Summary of Changes**  
ENERGY STAR® for Computer Monitors  
Draft 3 (Version 4.0) Specification

While notes and clarifications are found throughout this latest Draft 3 (Version 4.0) Specification, this summary highlights the changes made to Draft 2.5, both in terms of performance requirements and format. For additional details and documentation, including Draft 2.5, please visit the Monitors section of the ENERGY STAR Product Development Web site at [www.energystar.gov/productdevelopment](http://www.energystar.gov/productdevelopment).

The changes and clarifications described below are reflected in the Draft 3 ENERGY STAR Eligibility Criteria and are presented with their corresponding section numbers for easy reference.

**1) Definitions**

Line edits and other revisions have been made to the following definitions in Section 1 for clarity and consistency:

A. Computer Monitor

EPA has made one change to the computer monitor definition to clarify that screen size is intended to be the viewable diagonal screen size in inches.

D. Off Mode/Standby Power

One sentence regarding IEC 62301: Household Electrical Appliances – Measurement of Standby Power has been removed from the definition and inserted into Footnote 1.

E. Hard Off Mode

Based on feedback from Draft 2.5, the term “operating” has been removed from the definition for Hard Off Mode, as the product isn’t technically operating or functioning in this mode.

**3) Energy-Efficiency Specifications for Qualifying Products**

Modest revisions to the Tier 2 specification for On Mode are reflected in Section 3.

Widescreen Models

In this final draft, EPA has indicated that 16:9, 15:9, etc. are some examples of wide screen formats; not the only available formats.

A. On Mode/Active Power

For Tier 1, the levels have not changed and remain consistent with Draft 2.5.

For Tier 2, a new equation is provided for monitors under 1 megapixel; the second half of the equation for monitors at and above 1 megapixel remains the same. The first half of the equation has been changed as follows: If  $X < 1$  megapixel, then  $Y = 23$ . The second half of

the equation continues to read: if  $X \geq 1$  megapixel, then  $Y = 28X$ . In other words, monitors with less than 1 million pixels may consume up to 23 watts in On Mode to qualify as ENERGY STAR; for monitors with 1 million pixels or more, On Mode levels are calculated by using the formula  $Y = 28X$  (e.g., a 1 million pixel monitor would be allowed 28 watts, as  $28(1) = 28$ ). **Please note that only the first half of the equation, which addresses monitors with less than 1 megapixel, has changed.**

Tier 2 levels continue to accommodate larger screen sizes, as encouraged by stakeholders. The proposed change to Tier 2 reduces the performance level for low resolution/smaller screen size models without affecting the larger screen sizes.

#### B. Sleep and Off Modes

##### 1. Tiers 1 and 2

Sleep and Off Mode levels for Tiers 1 and 2 have not changed and remain consistent with Draft 2.5.

#### 4) Test Methodology

##### Introduction

Based on a stakeholder comment, EPA revised the language in one introductory paragraph to avoid any specific references to the partner, as the partner may not be conducting the tests.

##### A. Test Conditions

Based on stakeholder feedback, EPA has added language in Section 4.A requiring manufacturers to submit test values at local voltage/frequency conditions. While EPA considered limiting testing to 115 volts at 60 Hz, various concerns were raised about the potential variations in tested values across markets. Subsequent discussions with the Information Technology Industry Council (ITI) and other individual manufacturers indicated that testing at market-specific voltage and frequency values would be acceptable.

Finally, EPA has made three additional changes in response to stakeholder feedback:

- The ambient temperature range has been reduced from 15-25°C to 18-24°C;
- A relative humidity test range has been added; and
- To help ensure consistent power measurements, line impedance (less than 0.25 ohm) has been incorporated into the test conditions.

##### B. Dark Room Conditions

In response to a stakeholder comment, EPA has used the term “Off Mode/Standby Power” instead of “when the screen is switched off” or “with the power to the computer monitor off.”

##### E. Power Measurement Protocols

Two minor changes have been made to Section 4.E. In the first paragraph, any mention of specific voltage/frequency combinations has been removed and replaced with a reference to

Section 4.A. In the second paragraph that describes the 15% testing threshold, the text has been corrected to reflect power measurements as opposed to efficiency measurements.

I. Test Method

For Off Mode/Standby Power, EPA has added language allowing manufacturers to meet the specification by employing a soft off or a hard off power switch on their computer monitors. A hard off switch is not required for ENERGY STAR qualification. **If a computer monitor has both a hard off and a soft off switch, it must be tested after pushing the soft off switch to determine ENERGY STAR qualification.**

6) Effective Date

D. Fulfillment of Partner Commitments

After considering stakeholder comments, EPA has removed Section 6.D, Fulfillment of Partner Commitments, from the Eligibility Criteria and inserted the relevant text in the Partner Commitments. With this change, all Partner Commitments language is maintained in one place or section of the Partnership Agreement.